

Wheezy Kids: When Can I Treat For Asthma?

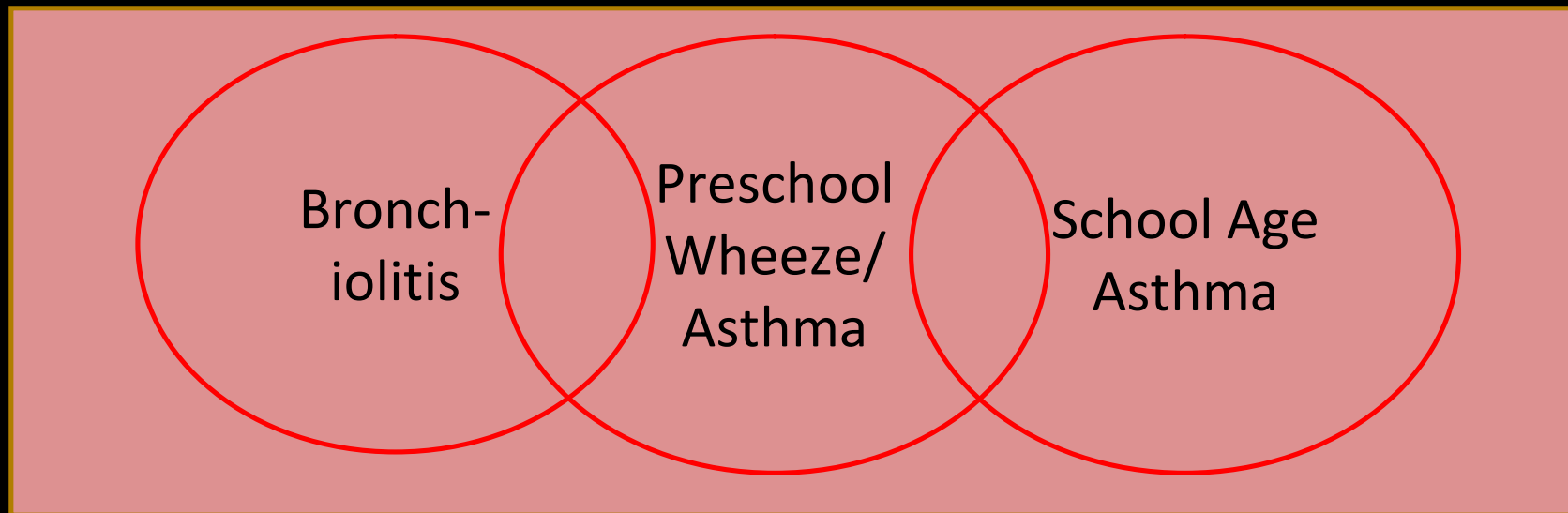
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Case #1

- A 2½ year old boy presents with acute wheeze
- He responds to salbutamol
- This is his 3rd episode
- He had infantile eczema
- His mum had asthma as a child
- Should he be started on a preventer?

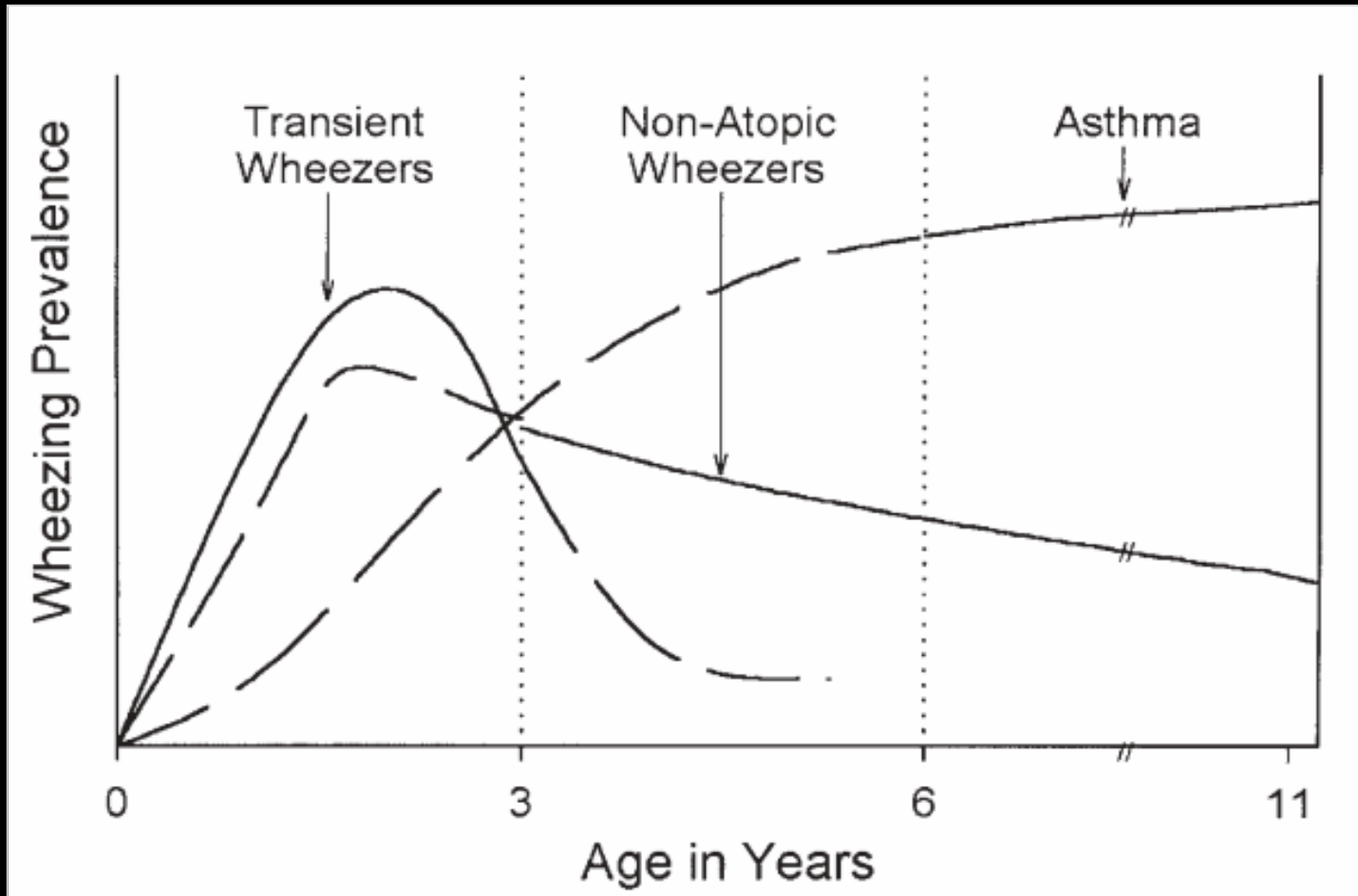
What Is Asthma in Children?

- No simple definition
- No definitive diagnostic test
- Varying syndromes by age



PRE-SCHOOL WHEEZE

Epidemiologic Patterns of Pre-school Wheeze



Stein et al, Thorax 1997;52:946-52

More Clinically Useful Definitions

- Temporal Patterns of Preschool Wheeze
 - Episodic viral wheeze
 - Multi-trigger wheeze (symptoms between episodes)
- Duration of wheeze
 - Transient wheeze
 - Persistent wheeze
 - Late-onset wheeze

Helpful Key Features

- Interval symptoms
 - GINA questions
- Eczema or hayfever
- Family history of atopy
- Response to therapy



Red Flags

- Daily or constant symptoms
 - Infant with wheeze every day since birth
 - Daily wet or moist cough
- Failure to thrive
- Digital clubbing



Treatment in Pre-schoolers

- Salbutamol variably effective
- Long-acting beta-agonists untested
- Inhaled corticosteroids only in those with interval symptoms
- Systemic steroids
 - Only for most severe (ie ICU)
 - Definitely not for < 2 years.
- Montelukast – not yet funded

Summary For Pre-School Wheeze

- ICS for interval symptoms only
 - Trial on, trial off!
- Otherwise manage acute symptoms
 - Salbutamol if it helps
- Avoid Long acting beta agonists < 4 years
- Beware other causes of wheeze/cough

SCHOOL AGE WHEEZE

Case #2

- A 6 year old girl has recurrent episodes of wheeze
- She was started on an ICS 6 months ago
 - Fluticasone 50 mcg two puffs BD via spacer
- She continues to have wheeze 3 days/week & wake 2 nights/wk
- What treatment should be added next?



Levels of Asthma Control

Characteristic	Controlled (All of the following)	Partly controlled (Any present in any week)	Uncontrolled	
Daytime symptoms	None (2 or less / week)	More than twice / week	3 or more features of partly controlled asthma present in any week	
Limitations of activities	None	Any		
Nocturnal symptoms / awakening	None	Any		
Need for rescue / “reliever” treatment	None (2 or less / week)	More than twice / week		
Lung function (PEF or FEV₁)	Normal	< 80% predicted or personal best (if known) on any day		
Exacerbation	None	One or more / year		1 in any week

Step-wise Approach to Therapy

		TREATMENT STEPS				
		STEP 1	STEP 2	STEP 3	STEP 4	STEP 5
		asthma education				
		environmental control				
		as needed rapid-acting β_2 -agonist				
			SELECT ONE	SELECT ONE	ADD ONE OR MORE	ADD ONE OR BOTH
CONTROLLER OPTIONS		as needed rapid-acting β_2 -agonist	low-dose ICS*	low-dose ICS <i>plus</i> long-acting β_2 -agonist	medium- or high-dose ICS <i>plus</i> long-acting β_2 -agonist	oral glucocorticosteroid (lowest dose)
			leukotriene modifier**	medium- or high-dose ICS	leukotriene modifier	anti-IgE treatment
				low-dose ICS <i>plus</i> leukotriene modifier	sustained-release theophylline	
				low-dose ICS <i>plus</i> sustained-release theophylline		

*inhaled glucocorticosteroids

** receptor antagonist or synthesis inhibitors



Step-wise Approach to Therapy

Bottom line

- Refer if not controlled with moderate ICS (400mcg/day) + LABA

Other Things to Consider

- Smoking cessation
- Reconsider diagnosis
- Review inhaler technique
- Review adherence
- Consider allergen avoidance
- Consider associated conditions
 - Rhinitis
 - Reflux

Is there a role for monitoring lung function in children?

- Peak flow
 - Highly effort dependent
 - Unreliable
- Spirometry
 - Not easily available
 - Normal in all except severe cases
- Fancy diagnostic tests
 - Salbutamol response
 - Exercise challenge
 - Exhaled nitric oxide

- GINA guidelines
- www.ginasthma.org

- Paediatric Society of NZ guidelines
- www.paediatrics.org.nz

- Starship Hospital Guidelines
- www.starship.org.nz